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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/540,956 | 03/13/2006 | Kumar Akhilesh Tyagi | 4544-051956 | 5119 |

28289 7590 12/17/2007
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| EXAMINER |
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KUMAR, VINOD

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| ART UNIT | PAPER NUMBER |
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1638

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| MAIL DATE | DELIVERY MODE |
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12/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/540,956 | TYAGI ET AL. | |
| | Examiner | Art Unit | |
| | Vinod Kumar | 1638 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters; prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 35-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of objections and rejections

1. Office acknowledges the receipt of Applicant's response filed on October 1, 2007. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. Claims 35-45 are pending. Claims 35-45 are examined on merits in the instant Office action. The objection to drawings is withdrawn upon further consideration. All previous claim rejections not set forth below have been withdrawn in view of claim amendments filed in the paper of October 1, 2007. This action is made FINAL.

Election/Restrictions

2. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 101

3. Claims 44-45 remain rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter for the reasons of record stated in the Office action mailed on June 27, 2007.

It is maintained that claims 44-45 read on wild type seeds from a transgenic plant per se, which are found in nature and thus, are unpatentable to applicant. Given meiotic segregation during the formation of male and female gametes, and genetic reassortment and recombination following pollination leading to seed production, the claims broadly read on untransformed seeds which are product of nature. The seeds, as claimed in claims 44-45, have the same characteristics as those found naturally and therefore do not constitute patentable subject matter. See *American Wood v. Fiber Disintegrating Co.*, 90 U.S. 566 (1974), *American Fruit Growers v. Brodgex Co.*, 283 U.S. 2 (1931), *Funk Brothers Seed Co. v. Kalo Inoculant Co.*, 33 U.S. 127 (1948), *Diamond v. Chakrabarty*, 206 USPQ 193 (1980). It is suggested that claims 44-45 be amended by inserting the term --, wherein said seeds comprise the polynucleotide sequence-- at the end of claims to identify a product that is not found in nature.

It is noted that Applicant's response and claim amendment filed in the paper of October 1, 2007 did not address the above described issue for claims 44 and 45. Accordingly, the rejection is maintained.

Claim Rejections - 35 USC § 103

4. Claims 35-45 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Mukhopadhyay et al. (NCBI/EMBL Database, Sequence Accession No. AF140722, Published June 7, 2000) in view of Hiel et al. (The Plant Journal, 6:271-282, 1994) and Liu et al. (Eur. J. Biochem., 262:247-257, 1999) for the reasons of record stated in the

Office action mailed on June 27, 2007. Applicant traverses the rejection in the paper filed on October 1, 2007.

Applicant argues that a rejection under 103(a) must be supported by some reason for a skilled artisan to combine the elements in the same manner as the applicant. Applicant further argues that the reason or motivation cited by the Office cannot be based on hindsight. Applicant further argues that there is no motivation to combine Mukhopadhyay with Liu because not all stress-tolerance related genes are transcription factors, and one skilled in the art would not recognize that Mukhopadhyay is a transcription factor gene. Applicant further argues that Liu et al. does not teach or suggest that an AN1/A20 type zinc-finger gene would be involved in stress tolerance. Applicant continues to argue that not all zinc-finger proteins are transcription factors, nor all zinc-finger genes related to stress tolerance (response, page 6, line 18 through the end of 1st paragraph of page 7).

Applicant's arguments were fully considered but were deemed to be unpersuasive. It is maintained that it would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to transform a plant with Mukhopadhyay et al. polynucleotide sequence encoding a zinc finger motif(s) containing protein using any method of plant transformation including the rice plant transformation method taught by Hiei et al., to produce a transgenic plant expressing Mukhopadhyay et al. zinc finger protein.

It is further maintained that given Liu et al. teach that zinc-finger motif containing proteins are implicated in plant's response to abiotic stresses, and abiotic stress

promoters comprise DNA binding sites for zinc finger motif containing proteins, one of the ordinary skill in the art would have been motivated to overexpress Mukhopadhyay et al. polynucleotide sequence in any plant including an economically important crop plant, such as rice to produce an abiotic stress tolerant transgenic plant with reasonable expectation of success.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In the instant case, it was well known in the art that zinc finger motif(s) containing proteins are transcription factors which are implicated in a plant's response to abiotic stresses. Thus, it would have been obvious and within the scope of an ordinary skill in the art to combine the teachings of Mukhopadhyay et al., Hiel et al., and Liu et al. to arrive at the instantly claimed invention with reasonable expectation of success.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the

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references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, one of ordinary skill in the art would have arrived at the instantly claimed invention by combining the teachings of Mukhopadhyay et al., Hiel et al. and Liu et al. with reasonable expectation of success.

Applicant is reminded that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In the instant case, given that Liu et al. assert that plant transcription factor(s) with zinc-finger motif(s) are implicated in abiotic stress tolerance in a plant, it would have been obvious and well within the scope of an ordinary skill in the art to try to overexpress Mukhopadhyay et al. polynucleotide sequence encoding the zinc-finger protein in a plant to obtain an abiotic stress tolerant transgenic plant with reasonable expectation of success. Also see recent Supreme Court decision in *KSR International Co. v. Teleflex inc.*, wherein KSR forecloses the argument that a **specific** teaching, suggestion or motivation is required to support a finding of obviousness. See the recent Board decision *Ex parte Smith*, -- USPQ2d --, slip op. at 20, (Bd. Pat. App. & Interf. June 25, 2007) (citing *KSR*, 82 USPQ2d at 1396).

Thus, the claimed invention as a whole is prima facie obvious over the combined teachings of the prior art.

Conclusions

5. Claims 35-45 remain rejected.

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is set to expire within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinod Kumar whose telephone number is (571) 272-4445. The examiner can normally be reached on 8.30 a.m. to 5.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Phuong Bui', with a stylized, cursive script.

PHUONG T. BUI
PRIMARY EXAMINER